8PP

OPPT-2002-0060-0027

INITIAL REVIEW EXPOSURE REPORT	P-99-0510	Page 1 of: 8
Assessor: MAMANTOV	Search ( )Y	Focus Date: 03/15/99
SAT Health: L-M		Focus Rep: MKP ~~AM~~
SAT Eco: M		SAT Rep: GT

Submitter:	Max. PV (kg/yr)		Manuf.	
			Import	X

Use:

Polymerization inhibitor for distillation of styrene. STN file CA: 8 references found; 129:41523,129:82074, 128:230819, 128:61912, 128:61909, 128:61899, 127:248896, 125:275667.

Consumer Exposure	( )no,
	( )yes, see consumer exp. page

Analogs/Comments

Chemical Name:

Trade Name:	UVINUL 4040 P	CAS:

Structure:

509900037931

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ANALOG DATA FORM

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		RATING		PHOTO	RATING
ANAEROBIC BIODEGRADATION	Ultimate	U		DIRECT	1
	Primary			INDIRECT	4
Comments:					
				AT OX	
HYDROLYSIS	A.	4		OH	4
(pH 7, 25 C)	B.			O3	1
Comments:					
SORPTION TO SOIL & SEDIMENT		2-3			
Comments:					
MIGRATION TO GROUND WATER		1-2		Persist/Bioacc	
BIO COMMENT					

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%	0-90
Sorp	2
Strip	4
Rem	1
Dest	3
Ult	3-4
Prim	1-2

MOL WT	FORM
	Log Kow 3.80

Structure:

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STATE	NEAT	Solid (orange powder)			EPI ESTIMATIONS
	MFG	NK, import			
FORMULA		% < 500			
MOL WT		% < 1000			

PROPERTY	Submitted	ICB-CRSS	Method/Ref		
MP (C)	150.40 - 150.40			150.40	
BP (C)		>500 @ 760 torr	EPI	813.68	@ 760 torr
@ P (torr)					
VP (torr)		7.5E-9	Est	7.29E-18	
S-H2O (g/L)		>40	Exp	183.000	mg/L
S-Org (g/L)					mg/L
Log Kow	1.51		Exp	1.51	2.12
pH, pKa			Log Koc	5.51	
Light Absorption (nm)	< > 290		Log BCF / BCF	0.46	2.90
Solvent:			H (atm m3/mol)	1.00E-08	
HYDRO t(1/2) @ pH 7, 25 C		da	Persistence / Bioaccumulation	P1 B1	
Volatilization (H2O) t(1/2)	River	1000.00 hr	Lake	1000.00	da
AOP t(1/2) (hr)	OH 1.08	O3	Total	1.08	
BIODEG	Linear Prob: 0.20	Nonlinear Prob: 0.00	Survey Ult: RECAL	Survey Prim: WK	
STP (% Removal)	Tot 1.98	Biod 0.09	Ads 1.88	Air 0.00	

REMOVAL IN WWT/POTW	% Overall		0	25	50	75	90	=> 99
			CATEGORY					
		RATING	1		2	3	4	
Sorption			low		moderate	strong	v.strong	
Stripping			extensive		moderate	low	negligible	
Biodegradation	Removal		unknown		high	moderate	negligible	
	Destruction		unknown		complete	partial		

Comments: possible

AEROBIC BIODEGRADATION	Ultimate		<= days	weeks	months	> months
	Primary		<= days	weeks	months	> months

Comments: OECD 301 F (Manom Resp): 0-20% / 28d
OECD 209: (Act Sldg Resp Inhib): 0 @ 1000 mg/L

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				CATEGORY			
		RATING	1	2	3	4
ANAEROBIC BIODEGRADATION	Ultimate	U	<= days	weeks	months	> months
	Primary		<= days	weeks	months	> months
Comments:						
	HYDRO (da)					
HYDROLYSIS	A. Noxide	3.5	<= mins	hours	days wk	=> months
(t(1/2) @ pH 7, 25 C)	B.		<= mins	hours	days	=> months
Comments:						
SORPTION TO SOIL & SEDIMENT			v.strong	strong	moderate	low
Comments:						
MIGRATION TO GROUND WATER			negl	slow	moderate	rapid
Comments:						
VOLATILIZATION	Rivers (hr)	1000	negl	slow	moderate	rapid
(t(1/2) w/o sediment	Lakes (da)	1000	negl	slow	moderate	rapid
Comments:						
PHOTOLYSIS	A. Direct		negl	slow	moderate	rapid
	B. Indirect		negl	slow	moderate	rapid
Comments:						
	AOP t(1/2) hr					
ATMOSPHERIC	A. OH	M	negl	slow	moderate	rapid
OXIDATION	B. O3		negl	slow	moderate	rapid
Comments:						

FINAL
INITIAL REVIEW EXPOSURE REPORT

CASE NUMBER(S): P-99-0510

ENVIRONMENTAL RELEASES

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RELEASE ID#: 1 Number of Release Sites: 6
RELEASE ACTIVITY: ( )MFG (X)PRO (X)IND USE ( )COMM USE ( )CONS USE

RELEASE DESCRIPTION:	WATER	LANDFILL	INCINER	LAND/INCIN	FUGITIVE
Total Releases:	1980.00 (kg/yr)	2000.00 (kg/yr)	5.00e+04 (kg/yr)	0.00 (kg/yr)	0.00 (kg/yr)
Release Days/yr:	150				0
Per Site Release:	2.20 (kg/day)	333.33 (kg/yr)	8333.33 (kg/yr)	0.00 (kg/yr)	0.00 (kg/day)

REMARKS :
Incineration release is less than trigger amount 0f 200 kg/site/yr after 99.9% destruction.

CASE NUMBER(S): P-99-0510

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

RELEASE ID#: 1

RELEASE ACTIVITY: ( )MFG (X)PRO (X)IND USE ( )COMM USE ( )CONS USE

RELEASE ACTIVITY SIC CODE(S): 3079

SIC CODE DESCRIPTION: Plastic Products Manufacture

Removal in Wastewater Treatment: 0.000 % - 90.000 %
Bio Concentration Factor : 2.900
Release (kg/site/day): 2.200 (before treatment) 2.200 (after treatment)

Release days/yr: 150

Water ingested (liters/day) : 2.000

Fish consumed (grams/day) : 16.900

PLANT TYPE	% TILE	STREAMFLOW (MLD) MEAN	STREAMFLOW (MLD) LOW	STREAM CONC (UG/L) MEAN	STREAM CONC (UG/L) LOW	HUMAN PDRs (MG/YR) WATER	HUMAN PDRs (MG/YR) FISH *
All	50	1076.12	108.16	2.04	20.34	0.61	1.50e-02
All	10	153.46	5.87	14.34	374.79	4.30	0.11

*Where, STREAM CONC = [(Release after treatment) X (1000)] / (Streamflow)
DRINKING WATER PDR = (Mean stream conc) X (water ingested/day) X (Release days/yr) X (0.001)
FISH INGESTION PDR = (Mean stream conc) X (Bio Concentration Factor) X (fish ingested/day) X (Release days/yr) X (1.0 E-6)

REMARKS :
COC=80 ppb. PDM run indicates COC is exceeded 48 days/yr.

1 CFS = 2.4465 MLD 1 MGD = 3.7854 MLD

CASE(s) : P-99-0510

SIC CODE-BASED PROBABILISTIC DILUTION MODEL (PDM) RESULTS
FOR FACILITY IN Plastic Products Manufacture (3079)
High-end Case Scenario

Release ID# : 1

Release Activity: ( )MFG (✓)PRO (✓)IND USE ( )COMM USE ( )CONS

Release Activity SIC Code (s) : 3079

SIC Code Description : Plastic Products Manufacture

Number of Release Sites : 6

Removal in Wastewater Treatment (Percent) : 0-90

	DIRECT	INDIRECT	ALL
10th %tile Mean Streamflow (MLD) :			
10th %tile Low Streamflow (MLD) :			
10th %tile Effluent Streamflow (MLD) :			

RELEASE DAYS/YR	AMOUNT RELEASED (kg/site/day)	CONCERN CONC. (ug/l)	PERCENT OF YEAR EXCEEDED*	DAYS PER YEAR EXCEEDED
150	2.20	80.00000	13.13	47.91

* 'PERCENT OF YEAR EXCEEDED' is obtained by dividing the 'DAYS PER YEAR EXCEEDED' by 365 days/yr.

Remarks:

Environmental Fate Review

NOTE 16 March 99

RE: P99-0510
TO: Mary Katherine Powers, EAB
FROM: Robert S. Boethling, EAB

The PMN substance has already been tested in a ready test, and little degradation was observed. Therefore, removal in treatment remains uncertain (it was estimated to be 0-90 % for initial review) and should be determined experimentally using the Porous Pot test (835.3220) or equivalent test based on the continuous-feed principle. With 48 days exceedance, there is a significant possibility that testing could yield information leading to a reduction of exceedance to below the 20 days threshold.